Beyond the Digital Divide: Exploring Attitudes about Information Technology, Political Participation, and Electronic Government

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Introduction

In an era when the outcome of the Presidential election was decided by a few hundred votes, and the balance of power in the U.S. Senate can be determined by a similarly close margin, the question of what effect the Internet as a medium for political information and involvement has on the voting public is a pertinent one. The Internet may enhance citizen information about elections, and in turn stimulate increased participation. Yet because of unequal access to technology, the Internet may only expand turnout rates among those who are already predisposed to vote, broadening the gulf between those groups who do and do not participate. In light of declining civic engagement and participation in American politics in the last three decades (Putnam 2000), the question of what effects new information technology may have on democracy is ever more important. The research we present suggests that information technology may be a double edged sword, increasing disparities in participation based on education and income while reducing the divide based on age. Our survey data reveals a democratic divide--individuals with higher education and income are more supportive of digital democracy.

This research is part of a larger project exploring the multiple dimensions of the "digital divide." The digital divide is defined as disparities in computer ownership and Internet access based on income, education, race, ethnicity, age and gender (Neu et al 1999, US Department of Commerce 2002, Compaine 2001). The larger research project identifies multiple "divides" relevant to the usage of technology—the access divide, a skills divide, an economic opportunity divide and a democratic divide. Economic opportunity and democratic participation are significant values in the American polity. Like the provision of public education, we suggest information technology access and literacy are 21st century mechanisms for "equality of

opportunity," giving citizens tools to be economically self sufficient and democratic citizens (Norris 1999).

Leading theories of political participation have shown that socioeconomic characteristics of voters—education and income—are the most important factors in explaining whether one votes in the United States. Voter turnout is also affected by race, age, gender and attitudinal factors such as strength of partisanship, political efficacy and political interest (Abramson 1983; Campbell et al 1960; Conway 1991; Wolfinger and Rosenstone 1980; Rosenstone and Hansen 1993; Piven and Cloward 1983; Verba and Nie 1972; Verba, Schlozman and Brady 1995). While a long tradition of research documents the demographic and psychological determinants of political participation, there is also evidence to suggest that changes in communication technology may play an important role in influencing electoral behavior. Research has found that those who read about politics in newspapers learn more than those who watch television (Smith 1989). In the past decade technology has changed the way many people gather news and participate in politics. The most important of these new technologies is the Internet, which has become the mass medium for the twenty-first century. The Internet combines the audiovisual components of traditional forms of media such as newspaper and television with the interactivity and speed of telephone and mail. The Internet facilitates communication flexibility, allowing individuals to choose what information to access and when to access it. Technology also permits users to exchange large amounts of information quickly regardless of distance.

A limited but developing body of research has explored the relationship between Internet use and varying forms of civic participation, including voting (Bimber 2001; Norris 2001; Alvarez and Nagler 2000; Shah, Kwak and Holbert 2001; Scheufele and Shah 2000; Solop 2000; Tolbert and McNeal 2001). Yet few have explored citizen *attitudes* toward the use of information technology for political participation and communication with government. We are

most interested in attitudes because of their potential to affect participation in the future, as nascent trends toward online government and politics build momentum. Is there a "democratic divide" that emerges from the access and skill divides? Are more educated, affluent citizens more supportive of using the Internet for political participation than those with lower socioeconomic status? A lack of access and or computer skills may negatively influence attitudes about using computers and the Internet to communicate with government and participate in politics. In an era when "e-government" is rapidly spreading and the use of Internet voting may well be on the horizon, the answers to these questions have clear implications for public policy as well as future political participation.

Some scholars suggest the Internet may function as a new deliberative public form, drawing the less engaged into civic life, strengthening democracy, increasing political participation and leveling the playing field. Others claim that the 'digital divide' and the growing corporate ownership of the Internet will merely replicate the patterns of inequality experienced today. Davis (1999) contends powerful groups will continue to dominate the production of political news and information, the expression of opinion, and the mobilization of political participation, online as well as off. The literature on traditional political participation already shows a substantial gap based on income and education (Campbell et al. 1960; Wolfinger and Rosenstone 1980).

This research addresses whether or not practices such as online voting and e-government will exacerbate or ameliorate existing disparities in political participation based on demographic factors. We use original survey research from a national random-sample telephone survey that included a sample drawn from high-poverty census tracts as well as a general sample. We also present a case study of an innovative effort to conduct an online forum in Berkeley, California, as well as evidence from our survey.

Consistent with cross-national research on digital democracy (Norris 2001), we argue that the Internet will neither serve to replicate politics as usual, nor will it transform governance and restore levels of mass political participation. Instead, our research suggests that opportunities for political information available via the Internet will have modest positive consequences for American democracy, increasing participation in politics for some, especially the young. Other traditional disparities in political participation are reinforced in cyberspace, however, as inequality in computer and Internet access overlaps with negative attitudes toward politics online.

THEORIES OF DIGITAL DEMOCRACY

Many scholars and political pundits argue that Americans are becoming more and more disenchanted with traditional institutions of representative government, and disillusioned with older forms of civic engagement and participation. While a "crisis of democracy" may be overstated, indicators suggest an increasing number of "critical citizens' are characterized by high expectations of democracy as an ideal and yet low evaluations of the actual performance of representative institutions (Norris 1999; Rosenthal 1997; Dionne 1996; Baldassarre 2000).

Participation has become one of the dominant themes of twenty-first century governance (Peters 1996, Chapter 3). Normative theorists in particular have long argued that direct forms of democracy can motivate participation by energizing citizens with a sense of civic duty and political efficacy (Pateman 1970). For advocates of direct democracy, opportunities and mechanisms are needed to increase citizen deliberation and direct involvement in decision-making, for example, through initiatives and referendums (Barber 1984). Calling for more "discursive democracy" (Dryzek 1990), "strong democracy" (Barber 1984), "teledemocracy" (Tofler 1995), and "deliberation" (Fishkin 1993), scholars have offered a variety of participatory models of decision-making (Peters 1996). From radical models of a pure direct democracy to

leaner and more transparent representative systems, citizen participation is deemed as critical in governing accountability and public dialogue (Budge 1996).

These participatory models imply that the system of representative democracy is far from perfect in transmitting the wishes of the public into policy, and that citizen participation can improve politics and policy, even in a complex modern society (Dryzek 1990; Barber 1984). The general prescription for making government function better is to foster greater individual and collective participation, and structure institutions to include mass citizen participation. In its simplest form, participatory government is plebescitarian, with the public being asked to decide public issues by a direct vote (Butler and Ranney 1994; Bowler, Donovan and Tolbert 1998; Bowler and Donovan 1998; Gerber 1999; Magleby 1984; Mendolnsohn and Parkin 2001).

Information technology is seen as the most important ingredient for fueling a participatory revolution (Norris 2001; Tofler 1995). Proponents argue the democratizing effect of the Internet will level the playing field and encourage citizen participation at all levels of government. The interactivity, low-cost, flexibility, and information capacity available on the Internet have the potential to allow the public to become more knowledgeable about politics as a first step toward greater participation. New information technologies generate multiple opportunities for political information and communication. Chat rooms, listservs, email, and bulletin board systems represent new modes of information exchange and opinion mobilization. By allowing individuals to be both receivers and active providers of information, the Internet may foster increased political communication. As a new channel of two-way communication, the Internet may strengthen and enrich connections between citizens on the one hand, and political parties, interest groups, and elected officials on the other (Norris 2001). Proponents of e-democracy argue that the Internet offers hope to reconnect citizens to the political process and

revive civic engagement in American politics (Rheingold 1993; Budge 1996; Hague and Loader 1999; Grossman 1995).

To date, the Internet has mostly provided a conduit for information and communication. In the future, the Internet may offer new opportunities for participation through online registration and voting, virtual town meetings, and petition drives that utilize electronic signatures. Some suggest that those states that have been leaders in using direct democracy will be the first to allow Internet voting and voter registration. An unsuccessful citizen initiative circulated for the 2000 California, ballot, for example, would have required the Secretary of State to implement Internet voting and voter registration (Initiative and Referendum Institutes, Washington, DC). Arizona, a state with frequent use of ballot initiatives and referenda, was the first to hold a binding election using Internet voting in 2000.

Others, however, contend that information technology will promote further inequality in democratic participation, widening the gap between those who participate and those who do not (Alvarez and Nagler 2000; Wilheim 2000; Margolis and Resnick 2000; Putnam 2000).[1] Individuals with higher income and education are already statistically more likely to vote in the United States (Wolfinger and Rosenstone 1980). Disparities in access to the Internet based on income, education, race, and ethnicity mean that technology resources are far from equally distributed and online politics may therefore amplify the voice of the affluent and well educated, and further marginalize the underprivileged (Davis and Owen 1998; Davis 1999; McChesney 1999; Norris 2001; Putnam 2000; Wilheim 2000). In this scenario, opportunities for online political participation will primarily benefit those elites with the resources and motivation to take advantage of them, leaving the poor and uneducated farther behind.

[1] There are other drawbacks to online politics as well, according to critics. For example, some argue that the Internet will narrow the focus of attention by fostering selective exposure to political information consistent with individual preferences and interests. Reduced exposure to conflicting views may reduce citizen political tolerance (Sunstein 2001).

Research on the Internet and Political Participation

How does empirical research inform this largely normative debate? Early studies on the effects of the Internet on civic engagement have been mixed. Using a national representative sample from the 1998 American National Election Surveys, Bimber (2001) found that access to the Internet had no impact on voter participation. With the exception of giving campaign donations, the political behavior of those with access to the Internet and online political information did not differ from those who did not use the Internet to seek political information. Access to the Internet and online political information did statistically increase the probability that a respondent would contribute money to political campaigns, suggesting a mobilizing potential. Bimber's research, however, is limited to one midterm election.

Recent research, using more sophisticated statistical methods and longitudinal datasets, finds the use of the Internet for political information has a positive effect on participation during recent presidential elections. Tolbert and McNeal (2001) find the Internet may enhance citizen information about candidates and elections, and in turn stimulate increased participation. Using National Election Study (NES) data from 1986-2000, they find that respondents with access to the Internet and online political news were significantly more likely to report turning out to vote in the 1996 and 2000 presidential elections. This poses the question, however, of whether the Internet influenced political participation, or whether political activists happened to be more likely to be online. The authors used a two-stage model to isolate cause and effect (to control for simultaneity problems) and used multivariate regression to hold factors other than Internet use constant. Participation increased even after controlling for education, income, race/ethnicity, gender, age, partisanship, attitudes, traditional media use, and state environmental factors. The exception to this pattern was the 1998 midterm election, consistent with Bimber (2001). Simulations suggest Internet access increased the probability of voting by an average of 12

percent, and use of online election information increased the probability of voting by 7.5 percent in the 2000 election, all else equal. The mobilizing potential of the Internet in 2000 was also associated with other forms of involvement in election campaigns. Individuals viewing online political information were significantly more likely to talk to others about candidates or parties, display buttons or signs, work for a party or candidate, attend rallies, give money to candidates, give money to parties, and give money to interest groups.

Other studies have addressed the information and communication potential of the Internet for influencing political participation, including activities such as contacting political officials, attending a rally, or signing a petition. Weber and Bergman (2001) found that those individuals who engaged in Internet activities such as using e-mail and chat-rooms were more likely to be engaged in a variety of political activities. Weber and Bergman, however, used *Survey 2000*, an on-line survey conducted as a joint effort by academic researchers and National Geographic Interactive. The survey was self-selected and non-random and therefore subject to selection bias, unlike the studies reported above. One nationally-representative survey (1999 DDB Life Style Study) contrasted Internet use for information exchange to use for social recreation, product consumption, or financial management. Across age cohorts (generation X and baby boomers) individuals who used the Internet for information exchange reported higher levels of interpersonal trust and civic engagement, after controlling for demographic, contextual and traditional media use variables (Shah, Kwak and Holbert 2001).

Another area of participation that has been singled out by researchers for study is citizen-initiated contact of public officials. Earlier research found that age, gender, education, political connectedness and proximity to government institutions are important factors in determining if a citizen will initiate communication. Older, educated, white citizens have been found to be more likely to contact government officials (Rosenstone and Hansen 1993; Verba et al 1995), while

women were less likely to instigate contact (Rosenstone and Hansen 1993; Verba et al 1995). Utilizing a self-selected, nonrandom on-line survey conducted in 1996 and 1997, and two phone surveys, Bimber (1999) examined whether or not the Internet altered the pattern of citizen communication. He found that when comparing traditional means of communication to the Internet, many of the same relations still existed. The Internet, however, magnified the gender gap in communication, but narrowed the difference based on political connectedness. Despite the limitations of Bimber's non-random sample, his study was one of the few to explore the demographic impact of new modes of communication.

Research on the Emerging Issue of Internet Voting

One of the controversies over the possible introduction of Internet voting is its differential impact, given disparities in access. An analysis of the 2000 online Arizona Democratic primary offers a window into how changing election procedures to accommodate digital technology may change election outcomes (Gibson 2002). The 2000 primary allowed registered Democratic voters to cast ballots in four ways; 41.16 % used the Internet, 37.68% used traditional absentee mail ballots, 4.8% used electronic voting machines at polling booths and 16.36% used paper ballots. Based on a pre- and post-election survey funded by the National Science Foundation, Solop (2000) found that better-educated and younger voters took advantage of the Internet voting option in the Arizona primary. Education has already been found to be an important factor in determining whether or not individuals choose to participate in politics. Inclusion of an Internet alternative may further bias voting patterns toward the higher educated. Younger voters, however, have historically been among those groups least likely to participate. On-line voting may be instrumental in increasing turnout among the young.

Alvarez and Nagler (2000) argue one way to assess Internet voting is to compare the group of citizens currently voting to those that would vote if online balloting were implemented.

Sharp differences in the demographics of these two groups would be evidence of a change in political representation caused by Internet voting. Alvarez and Nagler use aggregate census and election return data from Arizona's 15 counties and ecological inference methods (King 1997) to estimate white and nonwhite Democratic turnout rates. They compare turnout in the 1998 statewide Democratic primary with the 2000 Democratic presidential primary, where Internet voting was introduced. While overall statewide turnout was significantly lower in the 2000 primary (10.59%) compared to average primary turnout of 23.94% in the past three elections, the authors find that the average rate of decrease for nonwhite voters was six times greater than the average rate of decrease for white voters. White turnout actually increased from 1998 levels in two counties, but nonwhite turnout declined from 1998 to 2000 in every Arizona county.[1]

The research on Internet voting suggests its potential to mobilize new sectors of the population, particularly the young, but also to expand existing disparities in unequal participation rates based on race/ethnicity. A number of factors, however, make it difficult to generalize from the Arizona case study to other state and national elections. There is an inherent difficulty in comparing turnout in an off-year (1998) and presidential election (2000). The small number of Arizona counties included in the analysis may not be representative of the state as a whole. The unique circumstances of the Arizona election also cast some doubt on its broader implications. The national Democratic contest had already been decided by the time of the Arizona primary, resulting in extremely depressed turnout. It may have been this, rather than Internet voting, that caused turnout rates to plummet among some groups more than others.

Initial findings about Internet voting are suggestive, but Internet voting may not be a widespread reality in the proximate future. Controversies over e-voting include concerns about election fraud and online privacy, and the construction of secure voting systems would represent considerable expense (Clift 2000). In contrast, numerous states, however, already allow online

voter registration. Electronic government represents a technology application that is currently burgeoning, and that, according to its advocates, has the potential to transform the relationship between citizens and government at all levels – state, federal, and local.

THEORIES OF E-GOVERNMENT

E-government "refers to the delivery of information and services online via the Internet or other digital means" (West 2000, 2), and may also include opportunities for online political participation (Clift 2000; West 2001; Norris 2001). The diffusion of e-government has been rapid and widespread. The federal government has emphasized the creation of federal websites as part of its effort to "reinvent" government (Peterson and Seifert 2002), and there is now a central portal for all federal services (http://www.firstgov.gov). All 50 states have adopted some form of e-government (Stowers 1999); a recent survey indicates that 80% of local governments maintain a website (Norris et al. 2001).

E-government is characterized by multiple constituencies and multiple goals. Streamlining government-to-business transactions, such as procurement and permits, is one aim of e-government (Peterson and Siefert 2002), and the traditional orientation of state and municipal websites has been to promote business and economic development (Stowers 1999). E-government is most relevant to ordinary citizens, however, for its potential to 1) improve service delivery and 2) to enhance transparency and responsiveness of government agencies (West 2001). Proponents argue e-government could enable citizens to interact and receive services from government 24 hours a day, seven days a week. They describe e-government as "the continuous optimization of service delivery, constituency participation, and governance by transforming internal and external relationships through technology, the Internet and new media" (Gartner Group 2000). E-government initiatives are an outgrowth of the reinventing government paradigm, particularly at the federal level (Chadwick 2001, but see Ho forthcoming on e-

government at the local level). The Clinton/Gore administration spent much of the 1990's promoting the idea of "reinventing government," using technology as well as other administrative reforms to improve government efficiency and citizen participation for the twenty-first century (Osborne and Gaebler 1992). E-government is linked to goals of increasing efficiency by automating routine tasks, redefining clients as customers and empowering citizens. Others suggest e-government has grown larger than government reform and carries with it expectations and possibilities of transforming, not just reforming, government, consistent with the literature on digital democracy (Peterson and Seifert 2002).

What, concretely, does e-government look like?[2] At its most basic level, e-government consists of the posting of information about services, contact persons, and a variety of government documents, including forms, policies, and legislation. At a more sophisticated level, it allows completion of government transactions online. The federal government now allows electronic filing of income tax forms, and about 22 percent of federal and state websites offer online transactions for services such as vehicle registration, driver's licenses, hunting and fishing licenses, tax filing, and more (West 2000, Accenture 2001). The federal job bank described in the past chapter is an example of e-government services delivered entirely online. Such transactions are less frequently available on local government websites (Stowers 1999).

Many observers view e-government as a means for enhancing democratic participation Clift 2000; Melitski 2001; Norris 2001). Government information online promotes transparency of government. The Internet also facilitates communication with agencies and elected officials,

[2] Layne and Lee (2001) delineated a four-stage model of e-government evolution (cataloguing, transaction, vertical integration and horizontal integration). The availability of transactions on the web represents advancement to at least the second stage of implementation. Others define the evolution of e-government by the four stages of presence, interaction, transaction, and transformation. While an example of "presence" is a basic website that lists cursory information about an agency, hours of operation, mailing address or phone numbers, but has no interactive capabilities, "interactive" web-based initiatives offer enhanced capabilities, including instructions for obtaining services, or downloadable forms to be printed and mailed back to an agency. "Transaction" allows clients to complete entire tasks electronically through self-service operations such as license renewals, paying taxes and fees, and submitting bids for procurement contracts. Transformation is the highest order of evolution for e-government initiatives, including robust customer relationship management capabilities required to handle a full range of questions, problems and

especially through e-mail. Sixty-eight percent of federal and state websites include e-mail addresses (West 2000), and government receipt of e-mail from constituents is increasing (Clift 2000). Online public hearings and forums have the potential to allow interaction on a broader scale, and to encourage and deliberative participation. These broader forms of technology-enabled participation are fairly rare. Only 15 percent of federal and state websites provide message boards for public comment, and less than one percent offer real-time chat rooms (West 2000). The end of this chapter discusses Berkeley, California's experiment with an online forum during the revisions of the city's master plan. As the case study indicates, such use of the Internet is in its infancy, and confronts a number of legal and technical problems as well as disparities in citizen access to the Internet.

The ambiguous nature of e-government, like digital democracy, has resulted in hype and confusion with little systematic consideration of the expectations and limitations of taking government online (Peterson and Seifert 2002). Discussions of e-government are wrapped in the language of increasing citizen participation, but the reality is that the posting of information and service delivery are more prevalent than efforts to promote participation. Surveys of state and local officials show that most of them view e-government in terms of its potential to increase efficiency and cut costs (West 2000). Other studies explore the causes promoting the spread of e-government using more complex statistical analyses. Controlling for other factors, states with Republican-controlled legislatures, more professional networks, and higher levels of legislative professionalization are likely to engage in more extensive use of e-government. Citizen demand, measured by Internet access in the state, is not a significant explanation for innovation in e-government. The research implies efficiency concerns may drive reliance on e-government, rather than concerns about expanding political participation (McNeal, Tolbert, Mossberger and

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needs (Peterson and Seifert 2002). While there are currently few examples of this type of initiative, some suggest that at is most advanced level,

Dotterweich 2003). This is consistent with the other recent government reforms, such as "reinventing" government. At the federal level, the reinvention effort emphasized cost reduction and efficiency over other stated goals such as citizen empowerment and responsiveness (Kettl 2000).

Service delivery and efficiency concerns are likely to dominate further development of e-government (West 2001; Chadwick 2001; McNeal, Tolbert, Mossberger and Dotterweich 2003). Even if all the starry-eyed predictions for its potential do not come to pass, e-government has so far demonstrated important benefits for individual citizens. First, it can provide valuable access to information about government services. Websites can eliminate the need to travel to government offices to obtain government forms or other documents. Searchable databases, lists of frequently asked questions, and links to related sites make information easily accessible and convenient when they are provided. Low-income citizens often depend heavily upon various government services, and could benefit from better access to information. Second, e-government has contributed toward communication and accountability, although it falls short of the prescriptions of e-democracy proponents. Wider availability of information and the increased use of e-mail can facilitate civic awareness and interaction with officials. There are other means, of course, to obtain information and to contact officials, but they can involve frustrating trips from office to office, and long delays of telephone tag. Access to e-government for all is a desirable public objective.

To date, there are a few initial studies on the use of e-government. The Pew Internet and American Life project surveys describe use of government information as one of the fastest-growing online activities in recent years. Of those who use the Internet, 58 percent have visited at least one government web site, making this one of the most popular Internet uses (Larsen and

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e-government could potentially reorganize, combine and or eliminate existing government agencies and replace them with virtual ones.

Rainie 2002). Two surveys show that government users are likely to be younger, better-educated, and more affluent, although neither of these studies controls for other factors (West 2001; Larsen and Rainie 2002).[3] Both surveys also indicate that African-Americans are somewhat more likely than whites to visit local rather than federal government web sites, which are otherwise the least used (Larsen and Rainie 2001; West 2001).

Of those accessing online government information, 77% seek information on tourism or recreation, 70% conduct research for work or school, 63% download government forms, 63% look for information about services an agency provides, and 62% gather information on policies or issues. In terms of transactions, 16% of those who seek online government information are filing taxes, 12% renewing a driver's license or car registration and 7% renewing a professional license. A smaller percent (4) are seeking a fishing, hunting or recreation license, and 2 percent are paying a fine. The Pew survey data reveals that e-government is well underway (Pew Internet and American Life Project 2001), in contrast to online voting.

Some research is beginning to accumulate in the area of e-government, but so far the studies are few, and like much of the research on the access divide, these studies often lack statistical controls that would impart more confidence in their findings. The existing research on the Internet and political participation is more developed, but still limited. Studies are often based on single elections or non-random samples, limiting our ability to draw wide-ranging conclusions. Our research on attitudes may provide a better predictor of the way in which the Internet will affect political awareness and engagement in the near future. Are citizens supportive of e-government, and possible future reforms to implement Internet voting and online voter registration? How do citizens feel about using the Internet for town meetings? By examining attitudes, we can find out whether disadvantaged groups see access to e-government as an

[3] The public opinion poll reported in West (2001) also shows that men are more likely than women to have used e-government. The poll cited by

important need, and whether there is popular support for participatory reforms such as Internet voting, online voter registration and town meetings in the future.

METHODOLOGY

Our primary source of data is a national telephone survey conducted in July 2001 by Kent State University's Computer Assisted Telephone Interviewing (CATI) lab in the Department of Sociology. One national random sample of 1190 respondents was drawn from all high poverty census tracts in the 48 states, excluding Alaska and Hawaii. High poverty tracts were defined as those with 50% or more of the households living at or below poverty level. The response rate for individuals in the high poverty tracts was 92%. Federal data shows that telephone service now reaches 94 percent of the population (U.S. Department of Commerce 1995), so telephone surveys are a reasonable methodology for obtaining sample data even in low-income communities. A second national random sample of 655 respondents served as a control group, with a response rate of 88%. There were 1837 valid responses overall.

Telephone numbers were dialed daily through the months of July (37 days in the field) by trained interviewers. Up to 524 callbacks were attempted to contact potential respondents for the general population sample and 371 for the poverty sample. Answering machines were treated as "no answer" and called back on a regular no answer rotation, a minimum of three hours later. After securing cooperation, interviewers used Computer-Assisted Telephone Interviewing systems to administer questions and record responses. The telephone survey included 50 items and averaged 8.5 minutes to complete.

Because the survey targeted high poverty areas, the sample included a relatively large proportion of racial and ethnic minorities, compared to standard surveys. Of the 1837 respondents, 70% were white non-Hispanic, 19% were African-American, 9% Latino and 1.5%

West is the Hart/Teeter national survey taken in August 2000.

Asian-American. Thus, Latinos and Blacks comprised 28% of the sample population, compared to 25% of the U.S. population in the 2000 census. Thirty-eight percent of our sample had household incomes below $30,000. This allowed us to make accurate inferences to minority and low-income populations as a whole. The survey generated data that was comparable to large-sample studies. Sixty-one percent of our respondents reported having access to a home computer, and 54% reported having home Internet access. This closely tracks the figures in the U.S. Department of Commerce study conducted in August of 2001 - 66% and 54% for home computer and Internet access, respectively.

We use multivariate regression models to predict the impact of demographic and partisan variables on attitudes and experiences regarding the use of technology for various forms of political participation or information-gathering. The results of our regression models are presented in the appendix. To facilitate interpretation of the statistical findings, the regression coefficients from the statistical models are converted to expected probabilities using a Monte Carlo simulation technique (King et al 2000). These estimates allow us to compare the magnitude of differences in attitudes and experiences based on income, education, gender, race, age, partisanship, and voting. We calculate the change in the probability caused by moving from a variable's minimum to maximum value while simultaneously keeping all other variables set to their mean or (0 or 1 category for dichotomous variables). We also report some descriptive statistics (frequencies of responses to survey questions).

One case study will be briefly reported. The Berkeley, California city government recently solicited input for revisions to the city plan using an online forum. The Berkeley experience, like an earlier experiment in Santa Monica, California, illustrates that there are numerous challenges in using this form of direct democracy. Promoting equitable opportunities for participation is only one of these, according to our interviews.

FINDINGS FROM THE SURVEY

Will use of the Internet for political participation expand or ameliorate the existing disparities in traditional participation in American politics? Analysis of our survey data suggests both the potential of online politics to expand civic participation to those previously disengaged in politics, as well as the potential to widen existing disparities in participation based on income and education.

Simple percentages from our survey demonstrate that many who have Internet access do not use it for political purposes, and that some innovations, like online voting, are controversial. In comparison with the 54 percent who had home Internet access and 58 percent who had e-mail addresses, 31 percent of respondents had searched for political information online, but only 17 percent had seen an online political ad. There was somewhat more interest in e-government than in obtaining political information—40 percent of all respondents had looked up information on government services online.

Respondents expressed resounding support for putting government information online, but were more reticent about using the Internet for voting and online town meetings. More than three-quarters of respondents (78 percent) answered positively to the question, "How do you feel about looking up government information online?" This exceeded the two-thirds majorities who said they were willing to search for a job or take a class online. These attitudes confirm the popularity of e-government suggested by the Pew study of current use. Support for Internet voting was almost evenly split. When asked, "How do you feel about voting in a government election online?" 48 percent agreed, while 52 percent were opposed. This could indicate public qualms about this particular reform (security or privacy), or more general disinterest in voting. The survey revealed more support for online voter registration. When asked, "How do you feel

about registering to vote online?" support rose to 58%. Support for participating in an online political forum was mixed, as only 47% of individuals responded positively to the question, "How do you feel about participating in an online town meeting?" It is possible that our findings were skewed by the abundant presence of either voters or non-voters. But, when controlling for reported voting in traditional elections, support for the varying forms of digital government remained virtually the same.

Because limited access to computers and the Internet may have biased responses to the online participation question, we repeated the questions asking if the respondent supported use of information technology for voting, registration and e-government using a computer in a public place, where access would be provided and election fraud could be more easily controlled. When asked, "would you use a computer located in a public place to vote in an election?" support rose by more than 10 percent, with 59 percent agreeing. Of the respondents, 67 percent supported using a computer is a public place to register to vote and 74 percent supported using a computer to search for information on government services. As with job search and taking a course online, respondents were slightly less willing to seek government information using public access. But, they were considerably *more willing* to use new technology for voting and registration at a public place rather than at home. Moreover, even with a representative sample of low-income individuals, a majority of respondents were supportive of digital democracy and e-government, at least when public access (and security) is provided.

Support for Digital Democracy and E-Government, holding other factors constant

Using multivariate regression, we compared the results of four models. Given the differing levels of support for e-government versus voting online, we developed a separate model to explain support for each of the following: 1) voting in a government election online; 2) registering to vote online; 3) looking up government information online, and 4) participating in

an online town meeting. The responses for each question were coded 1 for agree and 0 for disagree.[4] We also created an index of support for online politics and government overall that combined questions 1 through 4.

The same explanatory factors used in the access divide analysis are included in the tables in this chapter, with one exception. We added a measure of traditional political participation where 1 indicates that the individual was both registered and voted in the 2000 presidential election and 0 otherwise. This measure was created by combining two survey questions and used instead of voting to help control for the problem of over reporting in survey data. The problem with using self-reported voting alone is that the percentage of people who ostensibly vote usually far outstrips actual turnout. The results are explained in the "what matters" box below, and the regression tables are provided in the appendix.

[4] Since the dependent variable is binary, logistic regression was used to analyze the data.

WHAT MATTERS

The only statistically significant differences are reported below (See appendix Table 5.1).

1. WHO IS MORE LIKELY TO SUPPORT ONLINE VOTING?

Educated, Young, Democrat, Voted in 2000 Elections

2. WHO IS MORE LIKELY TO SUPPORT ONLINE VOTER REGISTRATION?

Educated, Young, Democrat, Male, Voted in 2000 Elections

3. WHO IS MORE LIKELY TO SUPPORT E-GOVERNMENT (LOOKING UP GOVERNMENT INFORMATION ONLINE)

Educated, Young, Democrat, Affluent, White, Voted in 2000 Elections

4. WHO IS MORE LIKELY TO SUPPORT PARTICIPATING IN AN ONLINE TOWN MEETING?

Educated, Young, Affluent, Male, Voted in 2000 Elections

WHO IS MORE LIKELY TO SUPPORT DIGITAL DEMOCRACY AND E-GOVERNMENT OVERALL (questions 1-4 combined)?

Educated, Young, Democrat, Affluent, Male, Voted in 2000 Elections

While overall support for the varying forms of political participation varied significantly, from a low of 48% for online voting, to a high of 78% for searching for government information online, factors associated with support for digital democracy and e-government are surprisingly similar (See Appendix Table 5.1). What emerges from the data is clear evidence that tells a single story – a democratic divide exists in support for online politics and government. After controlling for other factors, respondents most likely to favor online politics and government are younger, more educated and affluent, and take part in traditional forms of political participation (voted in the 2000 election). While there was not a significant difference in attitudes toward online voting or registering based on income, the poor have more negative attitudes about e-

government---participating in an electronic town meeting or searching for government information online---than those with higher incomes. Partisan differences also surface, as Democrats are more supportive of online voting, registering to vote and accessing online government information than Independents or Republicans.

Gender appeared as an important factor, as males are statistically more willing than females to register to vote online and take part in online town meetings. The gender gap is consistent with Bimber (1999) who found that women were less likely to use the Internet to initiate contact with public officials. While gender clearly is important in the democratic divide, it is no longer a factor in the access gap. The findings suggest other factors, besides access, are important when assessing the potential impacts of information technology on public policy.

We find that race and ethnicity are not significant factors in predicting attitudes toward online political participation. African Americans, Latinos, and Asian Americans do not differ significantly from similarly-situated whites in support for digital democracy or e-government. While the access divide is clearly characterized by racial and ethnic disparities, the democratic divide is not.

We further explored the results for online voting and registration using predicted probabilities to compare the magnitude of income, education and age in shaping support for online politics. Since voting is the most basic component of participation in a democracy and previous surveys have not explored attitudes toward online voting and registration, we felt the responses to these questions had special importance. Online voting and registration were converted to expected probabilities (King et al 2000).[5]

[5] We calculate the change in the probability of access and support for online participation caused by moving from a variable's minimum to maximum value while simultaneously keeping all other variables set to their mean or (0 or 1 category for dichotomous variables). The change in

WHAT MATTERS

The only statistically significant differences are reported below (See appendix Table 5.2). We have calculated the probability that respondents agree with the following statements, controlling for other factors –

WHO IS MORE LIKELY TO SUPPORT ONLINE VOTING?

Educated (59% College Degree v. 40% High School Diploma) – **19 point difference**

Young (60% for 28 year olds vs. 41% for 61-year olds) – **19 point difference**

Democrats (50% vs. 40% for Republicans) – **10 point difference**

WHO IS MORE LIKELY TO SUPPORT ONLINE VOTER REGISTRATION?

Educated (67% College Degree v. 47% High School Diploma) – **22 point difference**

Young (71% for 28 year olds vs. 45% for 61-year olds) – **26 point difference**

Democrats (59% vs. 52% for Republicans) – **7 point difference**

Males (65% vs. 59 for Females) **– 6 point difference**

Note: Probabilities are calculated with Clarify Software (King et al 2000). Estimates are based on a hypothetical respondent who is female, white, independent, with values for education, age and income set at their mean for the sample.

The two factors that have the greatest substantive impact on support for online voting and registration are education and age. Holding other demographic factors constant, support for online voting and online registration were 19 and 22 percentage points higher among individuals with a college degree compared to those with only a high school diploma. This mirrors existing disparities in civic participation, which are largely associated with educational differences. Age was equally important. The simulations show a 19 percent decreased probability in supporting online voting and a 26 percent decreased probability in supporting online registration when

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the probability of support for online participation caused by moving from the minimum to the maximum values of the independent variables allows for effective substantive comparisons across independent variables.

moving from the young (28 years old, 1 standard deviation below the mean) to the old (61 years old, 1 standard deviation above the mean).

Compared to age and education, gender had a smaller impact on attitudes toward online participation, and was only statistically significant for attitudes towards online voter registration. After holding other factors constant, females were 6 percent less likely to favor online voter registration than males. Income, race, and ethnicity do not drive attitudes about online voting and registration, holding other demographic factors constant. Partisanship, however, resulted in significant and interesting differences. While Democrats were least likely to have Internet access (54%) they were most likely to favor online voting (50%) and registration (59%). Republicans were most likely to have access (64%), and less favorable toward digital politics. Independents were least likely to favor online voting (39%) and online registration (50%).

Finally, we examined support for online participation in a public location and current political activity online.[6]

WHAT MATTERS

The only statistically significant differences are reported below (See appendix Table 5.2). We have calculated the probability that respondents agree with the following statements, controlling for other factors –

WHO IS MORE LIKELY TO SUPPORT ONLINE VOTING & REGISTRATION IN A PUBLIC PLACE?

Young, Educated, Affluent, Male, Republican, Voted in 2000 Elections

WHO IS MORE LIKELY TO CURRENTLY BE ENAGED IN POLITICS ONLINE?

Young, Educated, Affluent, Male, Voted in 2000 Elections

[6] Table 5.2 in the appendix shows the results of a multivariate regression using combined scales for attitudes about online political participation, attitudes about online participation in a public place, and actual experience with online participation. Because the dependent variables are measured on an ordinal scale, unst andardized coefficients are based on an ordered logistic regression model.

We created an index of support for participation in a public place (where public access and/or security could be provided) in regard to voting, registering to vote, and looking up government information online. [7] These questions allow us to compensate for reluctance to participate online that is due to the need for computer access, assistance, or security concerns.

As discussed previously, citizens are generally more supportive of online participation in a public place. The findings reveal that young, more educated, higher income, and male respondents as well as those who participate in traditional politics were more willing to participate in online political activities in a public place. Public access does not change attitudes about participation for groups that are disadvantaged in terms of access or skills. Again, partisanship emerges as an important factor. Paradoxically, while Democrats were more supportive of future online voting and registration, Republicans were found to be more likely to support use of computers/Internet for voting in a public location. This suggests Republicans may be more concerned with security issues than Democrats. Overall the data reveals significantly lower support for electoral reforms for online voting, registration and e-government by those with lower incomes, lower education and those currently not civically engaged – even controlling for public access.

In contrast to attitudes, who *has actually used* the Internet to find information about politics and government? The dependent variable for this model consists of an index ranging from 0 to 3, created from three questions—Have you searched for political information online, looked up information on government services online, or seen an online political ad?[8] Again we find that the young, better-educated, affluent, males, and voters are more likely to be currently engaged in online political activities. There was no difference between Democrats, Republicans

and Independents in present use, suggesting none of these groups would benefit from online voting and registration in the near term. Our multivariate analysis confirms (and extends) the Pew e-government findings that were based on descriptive statistics. In sum, individuals with lower incomes, education and those currently not civically engaged are the least likely to use e-government or participate in politics online, consistent with what we know about traditional participation.

Analysis of our survey responses on voting in the 2000 elections[9] allows us to compare current participation, as reported by our sample, with interest in digital democracy. Our analysis of participation in the 2000 election agrees with other research on voting. It indicates the poor are significantly less likely to vote, while the educated and elderly are more likely to participate. Those with a political orientation (Republicans and Democrats) are more likely than independents to vote, and females more likely than males. Race and ethnicity also matter; African Americans are more likely than whites to participate, and Asian Americans less likely than whites to do so.

What, then, are the likely consequences of moving political participation onto the Internet? *In short, our data on willingness to use information technology for political purposes reveals an online democratic divide – individuals with higher education and income are more supportive of digital democracy, and are more likely to participate in politics online, than the poor and those with lower education.* In contrast to Alvarez and Nagler's study of turnout in the Arizona primary (2000), we do not find that race is significant for attitudes about online participation, controlling for other factors. This suggests that Internet voting may, however, decrease turnout among some minorities. African-Americans are currently more likely to vote

[7] Since the dependent variables are measured on an ordinal scale, our estimates are based on ordered logistic regression.
[8] See the last column in Appendix Table 5.2 for the results of the multivariate regression analysis.
[9] We created a dummy variable for the 2000 elections, coding responses as 1 for voting, and 0 otherwise.

than whites, controlling for education, age, and income. This is not true of support for Internet voting and other forms of online participation. Attitudes toward digital democracy appear to be related to gender and partisanship. Women are more hesitant about many political uses of the Internet, but the differences are slight. The partisan impact is unclear. Currently, there are no significant partisan differences in use of the Internet for political purposes. Democrats are more supportive of online registration, voting and e-government, but Republicans are even more supportive than Democrats if these activities occur in a public setting. The young, however, are more supportive of digital participation, and may become more involved in politics if online voting and registration are implemented.

On the down side, the data provides compelling evidence for those who argue that online politics will mirror, or exacerbate, existing disparities in the composition of the electorate based on socioeconomic status. On a positive note, the fact that younger respondents are more supportive of digital democracy, suggests the potential for expanding the electorate to include a group that has been traditionally under-represented. For the young, digital democracy and government may increase their civic engagement because of its convenience and their comfort with new technology. The importance of age in our findings is consistent with previous research on the Arizona Internet voting primary (Solop 2000).

Dilemmas for political participation online largely mimic the problem of traditional political participation– those who are better-educated are more interested and more able to participate. This indicates that addressing the democratic divide requires more than a technical solution, but attention to educational disparities as well.

Surveys provide one method of predicting the future path of digital democracy. Our case study of a local experiment with an online town meeting allows us to probe other issues regarding both digital democracy and e-government, and to connect them to our survey findings.

We are interested in finding out who participated in the online town meeting, and whether digital democracy holds promise for expanding participation. Talking to public officials about various uses of the Internet also allows us to put some aspects of e-government into perspective.

BERKELEY, CALIFORNIA'S ONLINE EXPERIMENT

Berkeley, California is a community at the cutting edge of experimentation with "e-democracy." Berkeley is a natural incubator for ideas joining e-government with citizen participation. In the shadow of Silicon Valley, the city is able to draw upon a regional culture of digital innovation, and a "wired" population of University of California students and academics. The city has a long tradition of political participation harking back to the early 1960's and the Free Speech movement on the Berkeley campus. Although many of the issues have changed, that tradition survives at the local level in public hearings and other city meetings that often attract 40 or 50 people out of a city of just over 100,000 residents. City officials cite problems with public hearings that straggle on past midnight because so many citizens are waiting their turn to be heard.[10] Berkeley is the type of city where digital divide issues are likely to emerge, for it shelters low-income as well as upscale neighborhoods on its quiet, tree-lined streets. The city also boasts a kaleidoscope of races and cultures: about half non-Hispanic white; more than 16 percent Asian American; almost 14 percent African-American; nearly 10 percent Latino; and approximately 10 percent who are from other races or multi-racial (U.S. Census 2000). Innovation, participation, and diversity make Berkeley a good test site for learning about e-democracy and the impact of the digital divide for online political participation.

Berkeley residents had the opportunity to register online their opinions about revisions to the city's general plan during the year 2000. The city cooperated with a nonprofit group called

[10] Both city officials and community activists noted this problem of a participatory bottleneck. (See, for example, the memo from Council Member Kriss Worthington to the mayor and city council, to "refer to city clerk and city manager studying the feasibility of a Berkeley sunshine ordinance and a process of implementation", dated March 27, 2001).

Moveon.org, which developed a software program called ActionForum, and used the Berkeley general plan as its first trial.[11] Because of the legal issues entangled in sponsoring an official online forum, the city did not host the forum itself.[12][13] Berkeley is technically an example of digital democracy rather than e-government, since the city did not sponsor the online town meeting. However, the city gave its blessing to the group, announcing the effort in a press release and brochure.

The ActionForum web site displayed a copy of the general plan and allowed citizens to make comments that listed their real names, city of residence, and occupation. The software included a feature that allows other site visitors to agree or disagree with comments and rank them in terms of their importance. Highly ranked comments rise to the top of the list, and lower-ranked comments drop to the bottom. Individuals who read or rate comments remain anonymous, in contrast to those who post their thoughts (for a demonstration, and the archived comments from the Berkeley general plan, go to http://www.actionforum.com).

In the assessment of both the city and Moveon.org, the response to the web site was limited, but nevertheless useful for highlighting some aspects that could be improved in the future, as well as some thorny issues that face such an enterprise. The archived files show 33 individuals who participated, but this number included the software developers and their friends. Most of those who participated, according to Moveon.org, were Berkeley activists, so the website did not succeed in enlarging the circle of participation. It did, however, attract some

[11] The software developers involved in Moveon.org and the ActionForum are Berkeley residents and creators of the Broederbon Software "flying toaster" screensaver and the popular computer quiz game, "You Don't Know Jack."

[12] The city attorney's office ruled that council members and members of commissions were not allowed to participate in the online forum, based on California state law called the "Brown Act" that prohibits elected officials from gathering to discuss issues or make decisions outside of public meetings.

[13] The collaboration between the city and Moveon.org was beneficial to both parties. Organizations outside city government have more discretion in monitoring a web site for slanderous content, or in controlling content through ranking or other methods. (First amendment issues prevent city governments from censoring material in any way.) Moveon.org valued the feedback that it got from the city, and the city saw this as an important experiment with a new venue for participation. The first amendment issue is likely to have a broader influence in the implementation of officially-sponsored online forums. Other legal issues specific to California hampered the exchange between officials and citizens through the forum. The city attorney's office ruled that council members and members of commissions were not allowed to participated in the online forum,

attention beyond those who posted comments. According to Berkeley's communications manager, city employees found it useful to review the comments, and 78 people who were not city employees looked at the site. The forum went online in February 2000, and Moveon.org submitted the final results to the city in August. Citizen input was not effective in shaping the final policy outcomes in this case, as the Planning Commission decided to scrap the staff's draft of the general plan and develop their own. The ActionForum was based on the staff version of the proposed revisions.

Limited participation resulted at least partly from the experimental nature of the endeavor. The city did not actively promote the initiative, because it was an initial pilot and there were many questions about how to implement it. The general plan was also a complex document, about 170 pages long, covering more than 600 different policies. As the communications manager suggested, those who did not traditionally participate would have found this a "daunting" first step. It is difficult to know whether issues of technology access and skill made a difference in the Berkeley project, but access was provided at 12 public libraries in the city. City officials were concerned about other aspects of disenfranchisement as well, including the problems of working parents and others who were unable to attend all night meetings.

The quality of civic discussion is a concern for online forums, as well as the quantity of participation. The prevalence of "junk" on e-democracy web sites presented a problem that the creators of the Action Forum attempted to solve with their system for rating comments. One possible difficulty, however, is that judgments may simply reflect the popularity of the opinion rather than its thoughtfulness. The software developers were pleased that none of the comments

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based on California state law called the "Brown Act" that prohibits elected officials from gathering to discuss issues or make decisions outside of public meetings.

on the general plan qualified as junk, in their assessment, but more extensive use of the software is needed to conclude that the rating system encourages more civil and considered discussion.

Despite the limited participation in the online forum, the Internet has influenced communication between citizens and government officials in Berkeley other ways. The general plan manager commented on the burgeoning use of e-mail to communicate with officials. The speed, ease, and informality of e-mail encourage people to weigh in with their concerns. Getting this input from citizens has made the plan manager's job "more fun, and less bureaucratic." The communications manager noted that posting documents and other information online required "A transition from bureaucratic speak to a more conversational tone on the Internet." The effort to move government processes onto the web and to make them more transparent has forced a re-examination of how government operates. "The software or being online is not really the crux of the issue," said the city's technology manager. "The crux of the issue is looking at how we do things internally, [and whether] . . . our procedures help or hinder civic engagement."

While digital democracy, even in Berkeley, is still in its infancy, e-government is incrementally changing some of the relationships between citizens and government. The Berkeley experiment demonstrated that holding such a forum is technically feasible, and nongovernmental organizations may have an important role in facilitating such discussions. But the reality is far from the ideal espoused by advocates of participatory democracy. The Berkeley experiment was limited for some reasons that may not apply to other efforts. Yet legal issues, the tenor of public discussion, and the lack of interest expressed by less educated and low-income individuals in our survey indicate more general potential barriers to widespread use and effective participation.

Participation in the online forum was dominated by a select group of political activists, mirroring traditional participation in city council meetings. These findings are consistent with

Davis (1999), who argues, "the Internet will not lead to the social and political revolution so widely predicted…Internet users will continue to be the affluent, the already politically interested and active." While we take a more optimistic position, and applaud governments for innovative attempts to increase dialogue with citizens using information technology, the case study suggests some limitations in the potential for expanding participation in government online.

CONCLUSION

Technology promises to have an increased impact on the way in which individuals interact with government and participate in politics. On-line voting and voter registration may be a reality in a number of states by the 2004 presidential elections (Brookings Institute 2000). In the first binding test of online voting, Arizona Democrats decided in 2000 to elect national convention delegates through Internet voting. In theory, the Internet may provide a means of updating the US election system for an information-based society. Access to online political news may also enhance information about candidates and elections, stimulating increased citizen participation (Tolbert and McNeal 2001).

Our findings on attitudes about digital democracy reveal a contradiction between theory and practice. Many Americans are hesitant about the use of the Internet for purposes such as voting, and others are clearly less interested in online political participation than in uses such as job search and taking a course online.[14] Although e-government seems to have caught on in popularity, Berkeley's experiment with digital democracy indicates that there are many hurdles for participatory uses of the Internet, in contrast to the largely informational uses of e-government.

[14] Although the data is not presented here, the authors have collected survey data on these issues as well. This paper is a draft of a chapter in a larger project examining the access, skill, opportunity, and democratic divides.

Consistent with cross-national accounts of the digital divide (Norris 2001), our survey data reveals an online democratic divide--individuals with higher education and income are more supportive of digital democracy and e-government, and are more likely to participate in politics online, than the poor and those with lower education. The reasons are not entirely clear. Individuals with limited educational backgrounds may not have the necessary skills or confidence to go online (James 2001), or may simply have negative or apathetic attitudes toward politics. According to our survey results, the willingness of individuals to use technology for political participation in its various forms is particularly low, in comparison with use of the Internet for economic advancement. The analysis provides evidence that online politics will mirror, or even exacerbate, existing patterns of unequal civic participation based on income and education. Racial disparities may well increase. Presently, African-Americans are more likely to vote than similarly-situated whites, but they are no more likely than whites to express interest in online participation, controlling for factors such as income and education.

On the other hand, the young emerge as a group not only more likely to have access to the Internet and computers, but significantly more supportive of digital democracy and e-government. Information technology may increase civic engagement of the young, altering and perhaps expanding the electorate. Our prediction of the impact of digital democracy on the representation of the American electorate is therefore mixed. Although the Internet promises to have some positive effects, it will not erase, and may even underscore, the bias of limited participation and representation in American politics that political scientist E.E. Schattschneider decried decades ago—"The flaw in the pluralist heaven is that the heavenly chorus sings with a strong upper class accent" (Schattschneider, *The Semi-Sovereign People*, New York: Holt, Rinehart, and Winston, 1960, p. 34-35).

Education emerged as the most important factor in the democratic divide. Support for online voting and online registration were 19 and 22 percentage points higher among individuals with a college degree compared to those with only a high school diploma. This suggests that in order to close the democratic divide in cyberspace, as well as traditional politics, education will be crucial as well as access to technology. More than 200 years ago, Thomas Jefferson argued that public education was necessary for an educated citizenry and for the health of our democracy. In the future, attention to information technology literacy and access may be mechanisms for achieving equal opportunity in the political sphere, but participation will also be rooted in factors that have traditionally been associated with civic engagement.

Table 5.1. Support for Digital Democracy and E-Government

VARIABLES	VOTING[1]		VOTER REGISTRATION[2]		LOOKING UP GOVERNMENT INFORMATION[3]		TOWN MEETINGS[4]	
	β (se)	p>|z|	β (se)	p>|z|	β (se)	p>|z|	β (se)	p>|z|
Poor	-.11(.14)	.40	-.10(.11)	.48	**-.32(.17)**	**.05**	**-.30(.14)**	**.03**
Education	**.33(.05)**	**.00**	**.40(.05)**	**.00**	**.42(.07)**	**.00**	**.22(.05)**	**.00**
Age	**-.02(.00)**	**.00**	**-.03(.00)**	**.00**	**-.02(.00)**	**.00**	**-.01(.00)**	**.00**
Male	.14(.12)	.25	**.28(.13)**	**.03**	.16(.16)	.29	**.26(.12)**	**.04**
Democrat	**.46(.16)**	**.00**	**.34(.16)**	**.04**	**.41(.20)**	**.03**	.10(.16)	.51
Republican	.06(.17)	.69	.07(.17)	.67	.27(.21)	.19	.07(.17)	.65
Latino	-.10(.23)	.66	-.27(.23)	.24	**-.53(.26)**	**.04**	.11(.23)	.61
Black	-.25(.17)	.14	-.22(.17)	.20	-.10(.21)	.61	.01(.17)	.93
Asian	-.18(.67)	.78	-.37(.72)	.60	**-1.17(.72)**	**.10**	-.51(.66)	.43
Participate	**.32(.16)**	**.04**	**.38(.16)**	**.02**	**.62(.19)**	**.00**	**.52(.16)**	**.00**
Constant	-.41(.30)	.16	.29(.30)	.33	**.73(.36)**	**.04**	-.40(.30)	.19
N	1167		1227		1210		1118	
LR Chi2 (12)	107.15	.00	162.15	.00	111.17	.00	73.39	.00
Pseudo R^2	.0663		.0995		.0935		.0474	

Source: C. Tolbert, M. Stansbury and K. Mossberger. July 2001. "Defining the Digital Divide Survey." National random digital-dialed telephone survey from high poverty U.S. census tracts and a control group of census tracts, N=1837, conducted by the Sociology Department Computer Assisted Telephone Interviewing Lab, Kent State University. Maximum likelihood coefficients, standard errors in parentheses; probabilities based on 2-tailed test. Statistically significant coefficients (p< .10) in bold.

[1] How do you feel about voting in a government election online?
[2] How do you feel about registering to vote online?
[3] How do you feel about looking up government info online?
[4] How do you feel about participating in an online town meeting?

Table 5.2 Support for Digital Democracy vs. Actual Experience

VARIABLES	SUPPORT FOR ONLINE PARTICIPATION[1]		SUPPORT FOR ONLINE PARTICIPATION IN PUBLIC PLACE[2]		EXPERIENCE WITH ONLINE POLITICAL PARTICIPATION[3]	
	β (se)	p>|z|	β (se)	p>|z|	β (se)	p>|z|
Poor	**-.22(.13)**	**.09**	**-.36(.12)**	**.00**	**-.28(.12)**	**.02**
Education	**.37(.05)**	**.00**	**.17(.05)**	**.00**	**.40(.05)**	**.00**
Age	**-.02(.00)**	**.00**	**-.01(.00)**	**.00**	**-.03(.00)**	**.00**
Male	**.27(.12)**	**.02**	**.20(.11)**	**.07**	**.43(.11)**	**.00**
Democrat	**.35(.15)**	**.02**	.35(.14)	.15	.09(.14)	.50
Republican	.08(.16)	.59	**.28(.15)**	**.06**	-.11(.15)	.45
Latino	-.30(.22)	.17	.07(.20)	.72	-.06(.20)	.75
Black	-.14(.16)	.36	.04(.15)	.78	-.15(.15)	.33
Asian	-.52(.55)	.34	-.71(.54)	.19	-.79(.56)	.15
Participate	**.48(.15)**	**.00**	**.36(.14)**	**.01**	**.60(.14)**	**.00**
N	963		1185		1251	
LR Chi2 (10)	151.65	.00	77.13	.00	230.04	.00
Pseudo R2	.0505		.0262		.0741	

Source: C. Tolbert, M. Stansbury and K. Mossberger. July 2001. "Defining the Digital Divide Survey." National random digital-dialed telephone survey from high poverty U.S. census tracts and a representative control group, N=1837, conducted by the Sociology Department Computer Assisted Telephone Interviewing Lab, Kent State University. Ordered logit maximum likelihood regression coefficients, standard errors in parentheses; probabilities based on 2-tailed test. Statistically significant coefficients ($p < .10$) in bold.

[1] Index of responses to the following four questions: How do you feel about voting in a government election online, registering to vote online, looking up government information online, participating in an online town meeting?
[2] Index of responses to the following three questions: How do you feel about voting in a government election online in a public place, registering to vote online in a public place, looking up government info online in a public place?
[3] Index of responses to the following three questions: Have you searched for political information online, looked up information on government services online, seen an online political ad?

References

Abramson, P. R. 1983. *Political Attitudes in America*. San Francisco: Freeman.

Accenture. 2001. *EDMVs Driving the Public Online*. Available [Online]: http://www.accenture.com/xd/xd.asp?it=enWeb&xd=industries/Government/gove_edmvx

Alvarez. R.M. and J. Nagler. 2000. "The Likely Consequences of Internet Voting for Political Representation." Presented at the Internet Voting and Democratic symposium at Loyola Law School, October 26, 2000, Los Angeles, California.

Baldassare, M. 2000. *California in the New Millennium: The Changing Social and Political Landscape*. Berkeley: University of California Press.

Barber, B. 1984. *Strong Democracy*. Berkeley, CA: University of California Press.

Barber, B. 1999. "Three Scenarios for the Future of Technology and Strong Democracy." *Political Science Quarterly.* 113: 573-90.

Benner, J. (2002, Feb. 7). "Bush Plan 'Digital Distortion'" *Wired News.* Available [Online]: http://www.wired.com/news/print/0,1294,50279,00.html.

Billue, Curtis, Aide to Council Member Kriss Worthington, City of Berkeley. 2001. Interview by author, 29 August, Berkeley, California.

Bimber, B. 1998. "The Internet and Political Mobilization: Research Note on the 1996 Election Season." *Social Science Computer Review*. 16(4): 391-401.

Bimber, B. 1999. "The Internet and Citizen Communication with Government: Does the Medium Matter?" *Political Communication.* 16(4): 409-428.

Bimber, B. 2001. "Information and Political Engagement in America: The Search for Effects of Information Technology at the Individual Level." *Political Research Quarterly*. 54(1):53-67.

Bower, S. and T. Donovan. 2002, "Democracy, Institutions and Attitudes about Citizen Influence on Government." *British Journal of Political Science*. 32: 371-390.

Bowler, S., Donovan, T. and Tolbert C. Eds., 1998. *Citizens as Legislators: Direct Democracy in the United States*. Columbus: Ohio State University Press.

Bucy, E.P. 2000. "Social Access to the Internet." *Harvard International Journal of the Press-Politics.* 5(1): 50-61.

Budge, I. 1996. *The New Challenge of Direct Democracy.* Cambridge, MA: Blackwell Publishers.

Butler, D. and Ranney, A. 1994. *Referendums around the World: The Growing Use of Direct Democracy.* AEI Press: Washington DC.

Campbell, A., P.E. Converse, W.E. Miller and D.E. Stokes. 1960. *The American Voter*. Chicago, Ill.: University of Chicago Press.

Chadwick, A. with C. May. 2001. "Interaction Between States and Citizens in the Age of the Internet: 'E-Government' in the United States, Britain, and the European Union," prepared for delivery at the annual meeting of the American Political Science Association, San Francisco, 30 August-2 September 2001.

Chew. F. 1994. "The Relationship of Information Needs to Issue Relevance and Media Use." *Journalism Quarterly*. 71: 676-688.

Clift, S. 2000."The E-Democracy E-Book: Democracy is Online 2.0" (http://www.e-democracy.org.do) December.

CNN.com. (March 4, 2002). "Net Access Gap Closing, Other Inequities Remain." Available [Online]: http://www.cnn.com/2002/TECH/internet/03/04/internet.inequalities.ap/index.html/

Compaine, B. M. (editor) 2001. *The Digital Divide: Facing a Crisis or Myth?* Cambridge, MA: MIT Press.

Conway, M. 1991. *Political Participation in the United States, 2d ed*. Washington, D.C.: CQ Press.

Cowan, Zack, City Attorney's Office, City of Berkeley. 2001. Interview by author, 29 August, Berkeley, California.

Davis, R. 1999. *The Web of Politics: The Internet's Impact on the American Political System.* New York: Oxford University Press.

Davis, R. and D. Owen. 1998. *New Media and American Politics.* New York: Oxford University Press.

Dionne, E. J. 1996. *They Only Look Dead: Why Progressives Will Dominate the New Political Era*. New York: Simon and Schuster.

Dryzek, J. S. 1990. *Discursive Democracy: Politics, Policy and Political Science*. Cambridge, Cambridge University Press.

Fishkin, J. 1993. *Democracy and Deliberation*. New Haven: Yale University Press.

Gartner Group, The. 2000. "Key Issues in E-government Strategy and Management," *Research Notes, Key Issues.* Stanford, CT: The Gartner Group.

Gerber, E. R. 1999. *The Populist Paradox*. Princeton: Princeton University Press.

Gibson, R. 2002. “Elections Online: Assessing Internet Voting in Light of the Arizona Democratic Primary.” *Political Science Quarterly*. Winter.

Grossman, L. 1995. *The Electronic Commonwealth.* New York: Penguin.

Hague, B. and B. Loader. 1999. *Digital Democracy: Discourse and Decision-making in the Information Age*. London: Rutledge.

Hansen, Timothy, Moveon.org. 2001. Interview by author, 29 August, Berkeley, California.

Ho, A. T. Forthcoming 2002. “Reinventing Local Governments and the E-Government Initiative.” *Public Administration Review*.

James, E. 2001. “Learning to Bridge the Digital Divide.” *The OECD Observer* 224: 43-45.

Kettle, D. 2000. *The Global Public Management Revolution : A Report on the Transformation of Governance*. Washington, DC: The Brookings Institution.

King, G. 1997. *A Solution to the Ecological Inference Problem.* Harvard, Mass: Cambridge University Press.

King, G., M. Tomz, and Jason Wittenberg. 2000. “Making the Most of Statistical Analysis: Improving Interpretation and Presentation.” *American Journal of Political Science* 44:347-361.

Larsen, E. and L. Rainie. 2002. "The Rise of the E-Citizen: How People Use Government Agencies' Web Sites," released April 3, 2001, Pew Internet and American Life Project (http://www.pewinternet.org).

LaSala, Donna, Division Manager, Telecommunications, Technical Development, and E-Govermment, City of Berkeley. 2001. Interview by author, 29 August, Berkeley, California.

Layne, K. and J. W. Lee. 2001. “Developing Fully Functional E-government: A Four Stage Model.” *Government Information Quarterly*. 18: (2) 122-136.

Lopez, Stephanie, Communications Manager, City of Berkeley. 2001. Interview by author, 29 August, Berkeley, California.

Magleby, D. 1984. *Direct Legislation: Voting on Ballot Propositions in the United States*. Baltimore: Johns Hopkins University Press.

Margois, M. and D. Resnick. 2000. *Politics as Usual: The Cyberspace “Revolution.”* Thousand Oaks, CA: Sage.

McChesney, R. 1999. *Rich Media, Poor Democracy: Communication Policy in Dubious Times.* Urbana, IL: University of Illinois Press.

Melitski, J. 2001. "The World of E-government and E-governance" Available [Online]: http://www.aspanet.org.

Mello, J. 2000. “Building a Better Bureaucracy,” CFO.com. http://www.cfo.com/article/1,4616|1|AD|1012,00.html.

Mendolnsohn, M. and Parkin, A. 2001, Eds., *Referendum Democracy: Citizens, Elites and Deliberation in Referendum Campaigns.* New York: MacMillan.

NcNeal, R., C. Tolbert, K. Mossberger and L. Dotterweich. Forthcoming 2003. “Innovating in Digital Government in the American States.” *Social Science Quarterly.*

Neu, C.R., R.H. Anderson, T.K. Bikson. 1998. *E-mail Communication Between Government and Citizens: Security, Policy Issues, and Next Steps.* Santa Monica, Calif.: Rand Corp.

Norris, D. P. Fletcher, and S. Holden. 2001. "Is Your Local Government Plugged In? Highlights of the 2000 Electronic Government Survey," prepared for the International City/County Management Association (ICMA) and Public Technology, Inc. (PTI). University of Maryland, Baltimore County, Feb. 27, 2001 (http://www.umbc.edu/mipar/final_draft/PDFs/e-gov.icma.fnal-4-25-01.pdf).

Norris, P. 2001. *Digital Divide: Civic Engagement, Information Poverty, and the Internet Worldwide*. Cambridge University Press.

Norris, P. 1999. *Critical Citizens: Global Support for Democratic Governance*. Oxford: Oxford University Press.

Olson, Carrie, Moveon.org. 2001. Interview by author, 29 August, Berkeley, California.

Osborne, D. and T. Gaebler. 1992. *Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector*. Reading, Mass: Addison-Wesley.

Pateman, Carole 1970. *Participation and Democratic Theory*. NY: Cambridge University Press.

Peters, B. G. 1996. *The Future of Governing: Four Emerging Models*. Lawrence, KS: Kansas University Press.

Peterson, E. and J. Seifert. 2002. “Expectation and Challenges of Emergent Electronic Government: The Promise of All Things E?” *Perspectives on Global Development and Technology* (in press).

Pew Research Center for the People and the Press, 2000. Campaign and Internet Survey. October 10-November 25, N=1,435.

Piven, F. F. and R. A. Cloward. 1988. *Why Americans Don’t Vote.* New York: Pantheon.
Putnam, R. 2000. *Bowling Alone: The Collapse and Revival of American Community.* New York: Simon and Schuster.

Rheingold, H. 1993. *The Virtual Community: Homesteading on the Electronic Frontier.* Reading, MA: Addison-Wesley.

Rosenstone, S.J. and M. Hansen. 1993. *Mobilization, Participation, and Democracy in America*. New York: Macmillan.

Rosenthal, A. 1997. *The Decline of Representative Democracy*. Washington, DC: CQ Press.
Scheufele, D. And D. Shah. 2000. "Personality Strength and Social Capital: The Role of Dispositional and Informational Variables in the Production of Civic Participation. *Communication Research,* 27 (2): 107-131.

Shah, D., N. Kwak and R. Holbert. 2001. "'Connecting' and 'Disconnecting' with Civic Life: Patterns of Internet Use and the Production of Social Capital." *Political Communication,* 18: 141-162.

Smith, E. 1989. *The Unchanging American Voter*. Berkeley: University of California Press.

Solop. F.I. 2000. "Digital Democracy Comes of Age in Arizona: Participation and Politics in the First Binding Internet Election." Presented at Annual Meeting of the American Political Science Association, Washington, D.C., August 31-September 3, 2000.

Stowers, G. N. L. 1999. "Becoming Cyberactive: State and Local Governments on the World Wide Web." *Government Information Quarterly*. 16: (2) 111-127.

Sunstein, C. 2001. "Freedom of Expression in the United States: The Future," In *The boundaries of Freedom of Expression and Order in American Democracy,* Ed. T. Hensley, Kent : Kent State University Press.

Thomas, Andrew, General Plan Manager, Planning Department, City of Berkeley. 2001. Interview by author, 29 August, Berkeley, California.

Toffler, A. 1995. *Creating a New Civilization: A Proposal for Reshaping Society.* Turner Publishing.

Tolbert, C. and R. McNeal. 2001. "Does the Internet increase Voter Turnout in Elections?" Paper presented at the Annual Meeting of the American Political Science Association, San Francisco, CA, August 30-September 2, 2001.

U.S. Census Bureau. 2000. Quick Tables. QT-PE, Race and Hispanic or Latino: 2000. Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data; Geographic Area: Berkeley city, California.
http://factfinder.census.gov/bf/_lang=e…0_SF1_U_QTP3_goe_id=16000US0606000.html.

U.S. Department of Commerce. National Telecommunication and Information Administration. 2002. *A Nation Online: How Americans Are Expanding Their Use of the Internet.* Available [Online]: http://www.ntia.doc.gov/ntiahome/dn/anationonline2.pdf/

Verba, S. and N. H. Nie. 1972. *Participation in America*. New York: Harper and Row.

Verba, S., K.L. Schlozman, and H. E. Brady. 1995. *Voice and Equality: Civic Voluntarism in American Politics*. Cambridge, MA: Harvard University Press.

Weber, L. M. and J. Bergman. 2001. "Who Participates and How? A Comparison of Citizens 'Online' and the Mass Public." Presented at the Annual Meeting of the Western Political Science Association, March 15-17, 2001, Las Vegas, Nevada.

West, D. M. 2000. *Assessing E-Government: The Internet, Democracy, and Service Delivery by State and Federal Governments.* World Bank. Available [Online]: http://www1.worldbank.org/publicsector/egov/EgovReportUS00.htm

West, Darrell M. 2001. "E-Government and the Transformation of Public Sector Service Delivery," prepared for delivery at the annual meeting of the American Political Science Association, San Francisco, 30 August-2 September, 2001.

Wilheim, A. 2000. *Democracy in the Digital Age: Challenges to Political Life in Cyberspace.* New York: Routledge.

Wolfinger, R., and S. J. Rosenstone. 1980. *Who votes?* New Haven: Yale University Press.

RESPONDENTS

Billue, Curtis, Aide to Council Member Kriss Worthington, City of Berkeley. 2001. Interview by author, 29 August, Berkeley, California.

Cowan, Zack, City Attorney's Office, City of Berkeley. 2001. Interview by author, 29 August, Berkeley, California.

Hansen, Timothy, Moveon.org. 2001. Interview by author, 29 August, Berkeley, California.

LaSala, Donna, Division Manager, Telecommunications, Technical Development, and E-Government, City of Berkeley. 2001. Interview by author, 29 August, Berkeley, California.

Lopez, Stephanie, Communications Manager, City of Berkeley. 2001. Interview by author, 29 August, Berkeley, California.

Olson, Carrie, Moveon.org. 2001. Interview by author, 29 August, Berkeley, California.

Thomas, Andrew, General Plan Manager, Planning Department, City of Berkeley. 2001. Interview by author, 29 August, Berkeley, California.

[1] Multivariate regression analysis suggests elderly, nonwhite, unemployed and rural residents were also statistically less likely to engage in Internet voting, controlling for other factors (Alvarez and Nagler 2000).